



Caltrans Division of Research,
Innovation and System Information

Research Results

Modal

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Project Title:

BART Air Freight—Phase 2

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Moving Air Freight via BART

*Is it feasible to use BART instead of trucks to move freight
in and out of San Francisco and Oakland airports?*

WHAT WAS THE NEED?

Air cargo in the San Francisco Bay Area continues to increase, spurred on with the growth of online purchases. Trucks are the primary mode for moving air freight between airports, sorting sites, distribution centers, and customers. However, trucks exacerbate peak period congestion, safety, and air quality in the vicinity of the major highways in and around the airports. Moving goods with trucks generates emissions not only while driving but also when idling during loading and unloading cargo. From the perspective of the air freight carriers, it is challenging to predict delivery times when trucks are subject to roadway congestion—delivery delays affect service quality and cause a loss of revenue. These concerns can be mitigated by using other transportation modes to move goods.

On average, the Bay Area Rapid Transit (BART) system has 63% unused capacity during non-peak hours. Using a portion of the unused capacity to transport freight would decrease truck traffic and the resulting impacts and allow for a more timely and predictable delivery of goods.



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integrated and efficient transportation
system to enhance California's
economy and livability.

WHAT WAS OUR GOAL?

The goal was to check the feasibility of using alternative means to transport air freight deliveries to reduce truck activities.

WHAT DID WE DO?

Caltrans worked with various stakeholders, including air freight carriers, to study the feasibility of using BART to move freight in and out of San Francisco and Oakland airports. The researchers assessed the technical, operational, and institutional changes that would need to be made to BART to accommodate freight. They investigated transshipment logistics between air freight carriers and BART, including security considerations for both BART and the freight carriers. The research also explored opportunities to demonstrate a small scale freight transport operation.

WHAT WAS THE OUTCOME?

It is feasible to concurrently operate a freight service and passenger service on BART. BART and the air freight carriers have similar operational needs in terms of trip time reliability, safety, and security. The biggest and most expensive obstacle is retrofitting the BART infrastructure to facilitate efficient freight movement between the different transport modes.

The research also produced a template for how to examine a train transit system for its potential to transport time-sensitive goods, providing a stepping stone for integrating freight movement into transit operations in California and nationwide.

WHAT IS THE BENEFIT?

Switching from a highway freight transport system to a rail-based system has the potential to improve highway safety, reduce emissions and fuel use, provide higher trip-time reliability to the air freight carriers, and offer BART a new revenue stream. Additionally, BART runs on electric power, a cleaner source of energy than diesel fuel. Utilizing BART's existing excess capacity reduces the demand for limited highway capacity. The fact that BART runs continually also offers freight carriers more flexibility as a transshipment option, especially if air cargo is delayed, because it is not necessary to dispatch additional trucks to pick up late loads.

LEARN MORE

To view the complete report:

www.dot.ca.gov/research/researchreports/reports/2015/final_report_task_2274.pdf

